REMARKS

In the August 19, 2008 Office Action, claims 1 and 6 were objected to and claims 1, 3-6 and 8-14 stand rejected in view of prior art. Claims 3, 5, 8 and 10 also were rejected for failing to indicate and claim particularly and distinctly the subject matter that Applicants regard as the invention. No other objections or rejections were made in the Office Action.

Status of Claims and Amendments

In response to the August 19, 2008 Office Action, Applicants have amended claims 3, 5, 8, 10, 11 and 13 as indicated above. Claims 1 and 6 have been cancelled by the current Amendment. Thus, claims 3-5 and 8-14 are pending, with claims 3-5 and 8-10 being the only independent claims. Reexamination and reconsideration of the pending claims are respectfully requested in view of above amendments and the following comments.

Specification

In paragraph 1 of the Office Action, the previous objections to the specification were withdrawn in view of the amendments and comments of the June 5, 2008 Amendment. Applicants thank the Examiner for withdrawing these objections.

Claim Objections

In paragraph 2 of the Office Action, claims 1 and 6 were objected to because the phrase "...when the detected power source voltage increases" is allegedly redundant. In response, claims 1 and 6 have been cancelled and, claims 3 and 8 have been rewritten in independent form without the allegedly redundant phrase. Accordingly, withdrawal of this objection is respectfully requested.

Claim Rejections - 35 U.S.C. §112

In paragraphs 5-7 of the Office Action, claims 3, 5, 8 and 10 were rejected under 35 U.S.C. §112, second paragraph.

With respect to claims 3 and 8, the Office Action asserts that these dependent claims included limitations that were broader than their respective independent claims 1 and 6. In

response, claims 1 and 6 have been cancelled, and claims 3 and 8 have been rewritten in independent form without the redundant limitation "increasing the command value in correspondence with a detection value of the power voltage when the detected power source voltage increases". Page 10, lines 23-28 of the instant specification states that modified horse power (corresponding to command value) is calculated by multiplying ratio between power voltage and DC voltage to set horse power. Therefore, from what is stated in the description, modified horse power increases in correspondence with the increasing amount of the DC voltage. Thus, the instant specification clearly supports this amendment. Claims 3 and 8 are now believed to comply with 35 U.S.C. §112, second paragraph. Accordingly, withdrawal of this rejection of these claims is respectfully requested.

With respect to claims 5 and 10, the Office Action asserts that "configured to maintain a value of when said command value was last changed..." is indefinite. In response, Applicants have amended claims 5 and 10 to recite - - configured to maintain a ~~power voltage~~ value of said detected DC voltage used when said command value was last changed- -. Applicants believe that since "value of when" has been amended to "value used when", the alleged indefiniteness has been overcome. Amended claims 5 and 10 of the present application do not suggest the input is somehow being kept the same by the system (please also refer to paragraph 6 of the Office Action), from the limitation of claims 5 and 10 that states "maintaining a value of said detected DC voltage". In other words, input is not limited somehow, but the detected input is simply maintained. Page 13, lines 4-12 and line 25 to the last line of the same page of the instant specification clearly supports this amendment. Claims 5 and 10 are now believed to comply with 35 U.S.C. §112, second paragraph. Accordingly, withdrawal of this rejection of these claims is respectfully requested.

Claims 11 and 13 have been amended to depend from claims 3 and 8, respectively (in view of the cancellation of claims 1 and 6). Page 10, lines 23-28 of the instant specification states that modified horse power (corresponding to command value) is calculated by multiplying ratio between power voltage and DC voltage to set horse power. Therefore, from what is stated in the instant specification, it is clear to one of ordinary skill in the art that, when DC voltage decreases, modified horse power decreases in correspondence with the

decreasing amount of the DC voltage. Thus, the instant specification clearly supports this amendment.

Applicants believe that the claims now comply with 35 U.S.C. §112, second paragraph. Withdrawal of the rejections is respectfully requested.

Rejections - 35 U.S.C. § 103

In paragraphs 9-17 of the Office Action, claims 1, 4-6 and 9-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over International Publication No. WO-01/21959 (Horiuchi et al.) in view of U.S. Patent No. 3,593,103 (Chandler et al.). In paragraphs 18-21 of the Office Action, claims 3 and 8 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Horiuchi et al. publication in view of the Chandler patent and further in view of Applicant's disclosure of Prior Art and Reddy. In response, Applicants have amended independent claims 3, 8, 11 and 13 as mentioned above. These rejections are respectfully traversed in view of the above amendments and the following comments.

Claims 3, 8, 11 and 13

Horiuchi et al. (International Publication WO01/20959 discloses (for example, in page 4, line 20 to page 6, line 2) that target horse power is set based on pressure and flow rate. In particular, in U.S. Patent No. 6,537,032 (U.S. Patent application No. 09/856,664), which corresponds to the Horiuchi et al. publication cited in the Office Action, Horiuchi et al. states:

> The controller 11 is composed of a microcomputer and has setting switches 21, 22, 23 as examples of setting means, a target horsepower calculation unit 25, present horsepower calculation unit 26, comparison unit 27 and compensatory calculation unit 28. A maximum set pressure, maximum set flow rate and maximum set horsepower are inputted to a storage unit (not shown) of the target horsepower calculation unit 25 in advance by using the setting switches 21, 22, 23, respectively. The target horsepower calculation unit 25 creates a target pressure-flow rate characteristic line shown in FIG. 2 (information equivalent thereto) based on the maximum set pressure, maximum set flow rate and maximum set horsepower and stores the line in the storage unit. As shown in FIG. 2, this target pressure-flow rate characteristic line is composed of a maximum flow rate line MV corresponding to a maximum set flow rate, a maximum horsepower curve MHP composed of a hyperbolic curve corresponding to a maximum set horsepower and a maximum pressure line MP corresponding to a maximum set pressure. The target horsepower calculation unit 25 also stores line SO

connecting an intersection point S of the maximum flow rate line MV and maximum horsepower curve MHP and the origin O and line TO connecting an intersection point T of the maximum horsepower curve MHP and maximum pressure line MP and the origin O and defines a region a enclosed by the vertical axis (flow rate axis), maximum flow rate line MV and line SO, region b enclosed by lines SO, TO and the maximum horsepower curve MHP and region c enclosed by line TO, the maximum pressure line MP and. horizontal axis (pressure axis). Furthermore, the target horsepower calculation unit 25 receives the rotation speed inputted from the rotation sensor 5, that is, a signal representing the present flow rate and a signal representing the present pressure inputted from the pressure sensor 6 and can identify by calculation a region out of the aforementioned regions a, b, c to which a point in FIG. 2 represented by these present flow rate and present pressure, that is, a point (present pressure, present flow rate) representing the present operating state belongs to. This calculation determines on which side of the lines or curve defining borders of regions a, b, c the point (present pressure, present flow rate) is located and a coordinate of the point (present pressure, present flow rate) is substituted in expressions of the lines or curve to see whether the value is positive or negative.

Furthermore, the target horsepower calculation unit 25 calculates a target horsepower in respective regions a, b, c as follows and outputs the target horsepower to the comparison unit 27;

when a point (present pressure, present flow rate) representing the present operating state represented as the present flow rate and present pressure in FIG. 2 belongs to the aforementioned region a,

when a point (present pressure, present flow rate) representing the present operating state represented as the present flow rate and present pressure in FIG. 2 belongs to the aforementioned region b, and

when a point (present pressure, present flow rate) representing the present operating state represented as the present flow rate and present pressure in FIG. 2 belongs to the aforementioned region c.

On the other hand, the present horsepower calculation unit 26 obtains a rotation speed of the variable-speed motor 2 represented by a signal received from the rotation sensor 5, that is, the present flow rate and present pressure represented by a signal received from the pressure sensor 6 and then calculates the present horsepower which is a product of the present flow rate and the present pressure, and outputs this present horsepower (=present flow rate.times.present pressure) to the comparison unit 27. This comparison unit 27 calculates a deviation of the target horsepower and present horsepower and outputs a control signal representing this deviation to the compensatory calculation unit 28. In this compensatory calculation unit 28, compensatory calculation such as, for example, PI (proportional integral) calculation or the

> like is performed on the control signal, and the compensated control signal is outputted to the inverter 3 to control the rotation speed of the variable-speed motor 2 so that the present horsepower coincides with the target horsepower. That is, autonomous control is achieved based on the present pressure and present flow rate without receiving a command pressure signal or command flow rate signal from outside so that a point (present pressure, present flow rate) representing the pressure and flow rate of fluid outputted from the fixed displacement type hydraulic pump 1 is located on the target pressure-flow rate characteristic line shown in FIG. 2.

Furthermore, page 116 of the REDDY non-patent document (Fundamentals of POWER ELECTRONICS, S. Rama Reddy) describes a graph showing a change of revolution-torque curve in correspondence with voltage. However, the graphs described in Reddy indicated a revolution-torque curve at the time when voltage output to induction motor is V1, V2, and V3. In other words, REDDY indicates that, when voltage output to induction motor increases, torque output by the induction motor increases.

On the other hand, Claim 3 and 8 of the present application define pressure, flow rate, and horse power as characteristics against power voltage. Since a technique extracted from a graph described in the REDDY non-patent document is a technique to derive revolution-torque curve in correspondence with voltage output to a motor, even if this technique is combined to the Horiuchi et al. publication, this hypothetical combination cannot derive a technique to define pressure, flow rate, and power horse as characteristics against a power voltage, as set forth in independent claims 3 and 8. Since the unique arrangements of claims 3 and 8 of the present application cannot be derived from the cited combination of references, independent claims 3 and 8 as well as their respective dependent claims 11 and 13 cannot be rendered obvious by this hypothetical combination.

Claims 4, 9, 12 and 14

The Office Action indicates in paragraph 14 that Chandler et al. discloses a driving apparatus of a motor based on a value of control signal VE which is zero when DC voltage of inverter is "the ideal" value and not zero when DC voltage of inverter is not the ideal value. However, independent claims 4 and 9 of the present application specify that ***command value is changed when DC voltage is judged to be the ideal value***. In Chandler et al., control signal VE is zero at this time, i.e., is not changed like the presently claimed invention. Also, independent claims 4 and 9 of the present application specify that ***last changed command***

value is maintained when DC voltage is judged not to be the ideal value. In Chandler et al., control signal VE changes in correspondence with DC voltage Vdc at this time, i.e., is not maintained like the presently claimed invention. In other words, the device of Chandler et al. acts in a manner ***opposite*** to the arrangements set forth in independent claims 4 and 9. Therefore, even if the Horiuchi et al publication and the Chandler et al. patent were somehow combined as suggested in the Office Action, this hypothetical combination would not result in the unique arrangements of independent claims 4 and 9. Since the unique arrangements of claims 4 and 9 of the present application cannot be derived from the cited combination of references, independent claims 4 and 9 as well as their respective dependent claims 12 and 14 cannot be rendered obvious by this hypothetical combination.

Claims 5 and 10

Independent claims 5 and 10 include arrangements similar to claims 4 and 9, respectively. Thus, the device of Chandler et al. acts in a manner ***opposite*** to the arrangements set forth in independent claims 5 and 10. Therefore, even if the Horiuchi et al publication and the Chandler et al. patent were somehow combined as suggested in the Office Action, this hypothetical combination would not result in the unique arrangements of independent claims 5 and 10. Since the unique arrangements of claims 5 and 10 of the present application cannot be derived from the cited combination of references, independent claims 5 and 10 cannot be rendered obvious by this hypothetical combination.

* * *

In view of the foregoing amendment and comments, Applicants respectfully assert that claims 3-5 and 8-14 are now in condition for allowance. Reexamination and reconsideration of the pending claims are respectfully requested.

Respectfully submitted,

/Patrick A. Hilsmier/
Patrick A. Hilsmier
Reg. No. 46,034

GLOBAL IP COUNSELORS, LLP
1233 Twentieth Street, NW, Suite 700
Washington, DC 20036
(202)-293-0444
Dated: November 19, 2008
S:\11-NOV08-YTY\DK-US055091 Amendment.doc